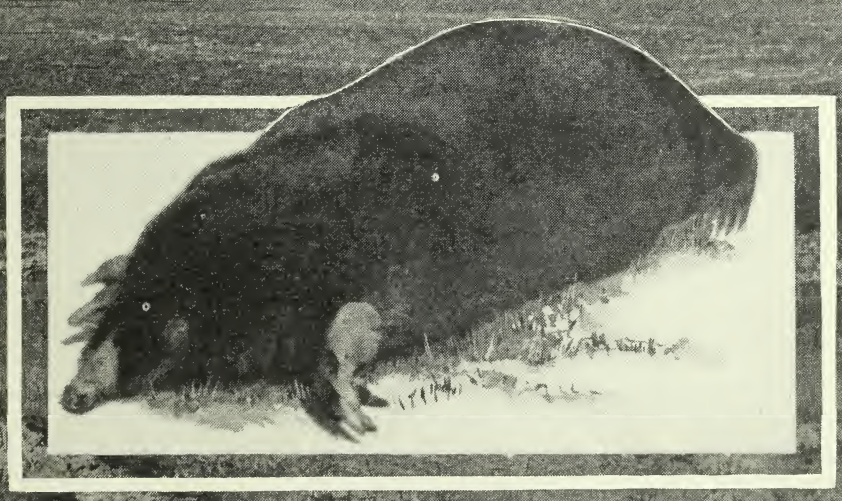
MOLE CONTROL



CONSERVATION
BULLETIN 16

FISH AND WILDLIFE SERVICE
U. S. DEPARTMENT OF THE INTERIOR

UNITED STATES DEPARTMENT OF THE INTERIOR
Harold L. Ickes, Secretary

FISH AND WILDLIFE SERVICE
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Conservation Bulletin 16

MOLE CONTROL

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UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1941

For sale by the Superintendent of Documents, Washington, D. C. - - - - - - - Price 10 cents

MOLES carry on their underground work unnoticed by man until their telltale ridges and mounds have disfigured lawns, damaged golf courses, or ruined seed beds in the garden or nursery. When such evidences of damage are first noticed, control measures should be undertaken on the affected area as promptly as possible.

Unlike rodents, moles live chiefly upon earthworms and insects that inhabit the ground. To the extent that they destroy harmful insects they are beneficial, and no control campaign should be carried on against these insectivorous mammals on areas where their burrowing does no damage.

This bulletin includes instructions for combating the ravages of the three eastern species and also gives specific directions for trapping the larger Townsend's mole of the Pacific Coast States.

MOLE CONTROL

CONTENTS

WHERE MOLES ARE FOUND

WITHIN THE BOUNDARIES of the United States are five groups of true moles. Two of these are confined to the Pacific coast, and three are distributed over the section mostly east of the one-hundredth meridian, extending from Canada to the Gulf of Mexico (fig. 1). No moles are known in the Great Basin and the Rocky Mountain regions, nor in the western parts of the Great Plains. The common mole of the eastern part of the United States (*Scalopus aquaticus*) may be found almost anywhere south of New England, New York, Michigan, and central Minnesota, except in the mountain regions. In the latter districts and in the greater part of Pennsylvania, New York, New England, and to the northward the common mole is replaced by the star-nosed mole (*Condylura cristata*) and

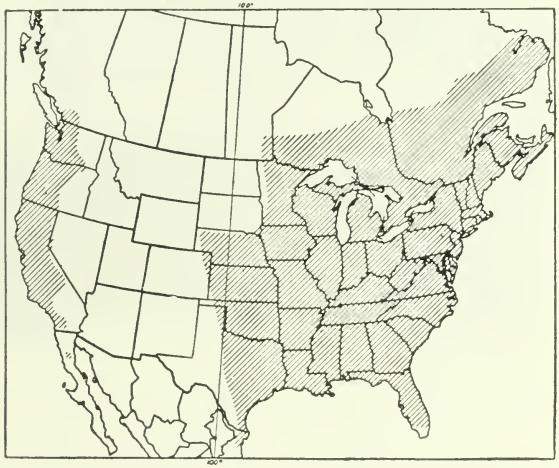

FIGURE 1.—Distribution of moles in North America. The Pacific coast area includes the ranges of Townsend's and Gibbs' moles (*Scapanus* and *Neurotrichus*); in the eastern area are the common mole (*Scalopus*), star-nosed mole (*Condylura*), and Brewer's mole (*Parascalops*).

NOTE.—This bulletin supersedes Farmers' Bulletin 1716, issued in 1933 by the U. S. Department of Agriculture—a contribution of the Bureau of Biological Survey, which was consolidated in 1940 with the Bureau of Fisheries to form the Fish and Wildlife Service, U. S. Department of the Interior. Acknowledgment is made to Theo. H. Scheffer, former biologist, author of Farmers' Bulletin 1247, American Moles as Agricultural Pests and as Fur Producers, prepared in 1922, large parts of which were used in the preparation of the bulletin now superseded.

Brewer's mole (*Parascalops breweri*). The largest mole on this continent is Townsend's mole (*Scapanus townsendii*), of the Pacific Coast States. Moles of the genus *Scapanus* are more abundant in this region than are any other moles there or elsewhere in the United States. Gibbs' mole (*Neurotrichus gibbsii*), another west-coast form, is somewhat rare and so small as ordinarily to escape notice.

The general distribution of moles seems to depend largely upon atmospheric humidity and the resulting condition of the soil. They are absent altogether from arid regions, and where the prairies of the Middle West merge gradually into the Plains they are found only along watercourses. In these regions of deficient rainfall the ground

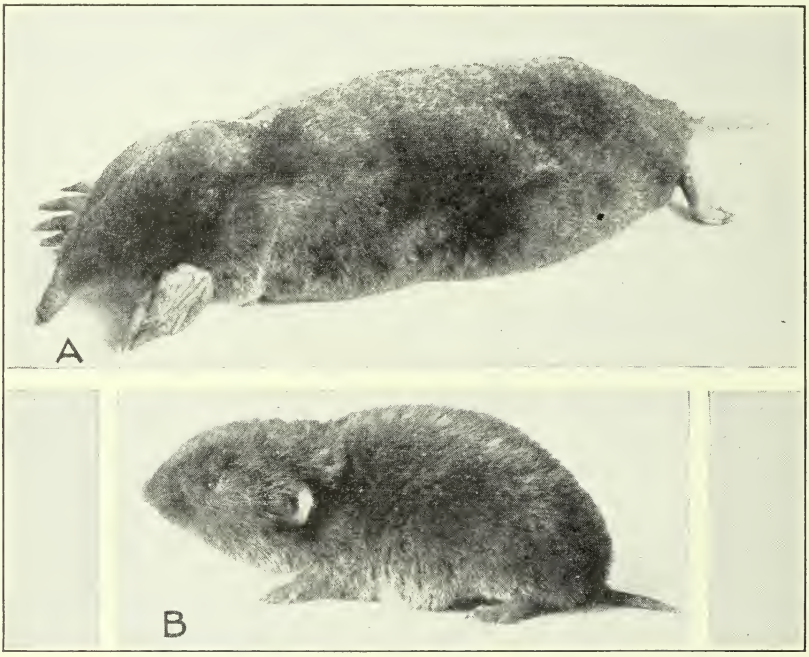

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FIGURE 2.—Comparison of the mole (*A*) and a member of the rodent order (pine mouse) (*B*). Broad, rounded hands turned outward, pointed snout, and practical absence of eyes serve to distinguish the mole from mice, rats, and other rodents.

is so dry and hard during the greater part of the year as to be wholly unsuited to the existence of earthworms and insect larvae, upon which the mole depends for subsistence. In the East moles are most abundant in moist, rich soils along streams, particularly if these situations are somewhat shaded. In the cooler, more uniform climate of the Pacific Northwest they are plentiful anywhere in the well-watered valleys.

DESCRIPTION OF THE MOLE

So seldom is the mole seen, even by those familiar with its work, that it is often confused with other small creatures, particularly the shrew, the vole (or meadow mouse), and the pocket gopher. From the pocket gopher the mole is readily distinguished by the absence

of cheek pouches and by its less conspicuous eyes. The mole is not a rodent, and can be readily distinguished from any of this order and from the shrew by its short, stout, front limbs, ending in broad, rounded hands with strong claws and with palms turned outward; it has a rather elongated body, close, plushlike fur, a pointed snout, and a short tail (figs. 2 and 3). Neither external eyes nor ears are ordinarily in evidence. If not totally blind, the common mole of the eastern part of the United States can at best merely distinguish between light and darkness, as what remains of its organs of sight lies wholly beneath the skin. The degeneration of these organs has apparently not proceeded so far in Townsend's mole, which usually opens its eyes when annoyed by an observer. The eyes of the star-nosed mole also are readily discernible.

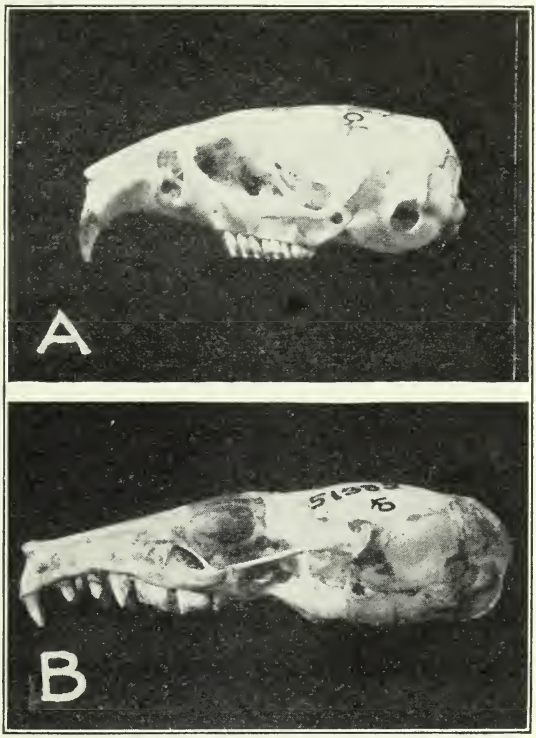

FIGURE 3.—The difference in shape of head and arrangement of teeth in moles and in rodents is readily observable in these typical skulls: *A*, Skull of field mouse (*Microtus*); *B*, skull of mole (*Scalopus*). Both are enlarged to twice natural size.

HABITS

The mole lives mostly underground. Such experiences as fall to its lot must necessarily come through its sensitive touch, acute hearing, or highly developed powers of smell. While the animal is seldom seen aboveground, it sometimes ventures out of its tunnels, perhaps chiefly at night.

RUNWAYS AND NESTS

When a mole is living in lawns, gardens, or fields, telltale ridges or conspicuous mounds of earth (figs. 4 and 5) plainly indicate its runways. The ridges show the direction and course of the animal's hunting paths, which are so close to the surface that the sod or the soil crust is raised. The mounds indicate deeper tunneling, for they are formed of earth pushed up from lower workings, where the soil is too compact to be simply crowded aside. Such mounds thickly dot the mole-infested areas of the Pacific coast country. They are of much rarer occurrence in the habitat of the common eastern species, but the star-nosed mole regularly uses this method to dispose

of dirt displaced from its tunnels. The number of mounds or ridges in a field does not indicate the number of moles present; one Townsend's mole, for instance, in a period of 77 days constructed 302 mounds on a quarter-acre field.

The mounds of Townsend's and other moles of the west coast resemble superficially the earth heaps thrown up by pocket gophers, but usually they can be distinguished from the latter by even casual inspection (fig. 6). The mole heaps are the more rounded and symmetrical and are built up, volcano fashion, by successive upheavals beneath and through the center of the pile, the soil that is thus exca-

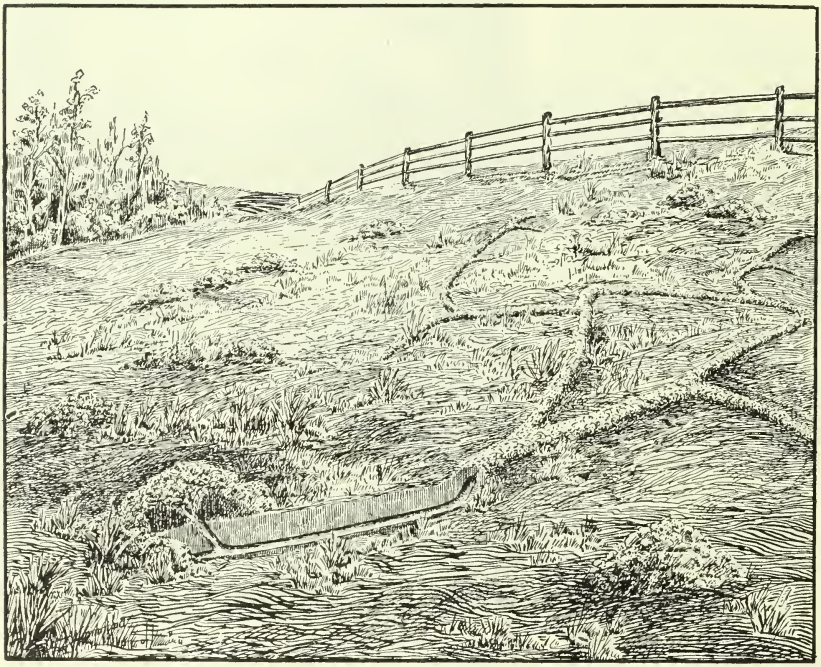

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FIGURE 4.—Ridges and mounds made by moles. The sectional view shows part of a deeper runway connected with the mound and with a subsurface hunting path.

vated rolling down the sides from the summit. The pocket gopher, on the other hand, brings up the soil excavated in its workings and dumps it on the surface in armfuls, thus forming low, semicircular, or fan-shaped, accumulations of fine dirt more or less to one side of the burrow exit.

The more permanent tunnels of the mole commonly run along fences, hedges, walks, plant rows, and the ridges of open fields. Such situations are frequented by the mole because they afford some concealment or shelter and especially because they are less often disturbed by the activities of man. These burrows vary in depth from only 1 or 2 inches to levels beneath the reach of the plow. They constitute a labyrinth of runways, constructed with apparently no definite plan and including here and there an enlargement. One

or more of these enlargements may, especially in the breeding season, contain a nest of half-dried grass or of grass and dead leaves.

Certain galleries or passages leading out from the deeper central system trend upward here and there to join the shallow subsurface runs that stretch out over the mole's hunting grounds (fig. 4). Through these runs the little animal hurries along at irregular intervals in search of food and, when occasion demands, extends the limits of its operations by pushing out into untouched soil.

The movements of the mole as it extends the subsurface runways are much like those of a man swimming with the breast stroke. The mole's hands are brought forward, palms outward, until they

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FIGURE 5.—Mounds characteristic of moles in the Pacific coast region. These thickly dot the areas infested by Townsend's mole in Washington and Oregon. Mounds are rarely made by the common eastern mole, but they are regularly pushed up by the star-nosed mole.

almost or quite touch in front of the snout. With powerful action of the heavy shoulder muscles they are then thrust outward and backward to push the soil aside, while the body follows in the passageway thus created. The snout is a sensitive organ of touch and is not used for rooting.

ACTIVE PERIODS

Direct observations fail to show that there is any one time of day when the mole is more active than at others, in spite of the common belief that it works only at regular periods each day—morning, noon, and evening, as most frequently alleged. If an opening is made into a mole's runway the animal when it next comes that way will invariably repair the breach. By taking advantage of this

habit one can gain much information if he will visit, at short intervals through the day, each of a number of runs in which a small break has been made. A large number of runs have thus been kept under observation for periods of several days at a time, with results indicating that moles are as likely to be found working at one hour of the day or night as at another, especially at seasons when there is no great variation in temperature throughout the period of 24 hours.

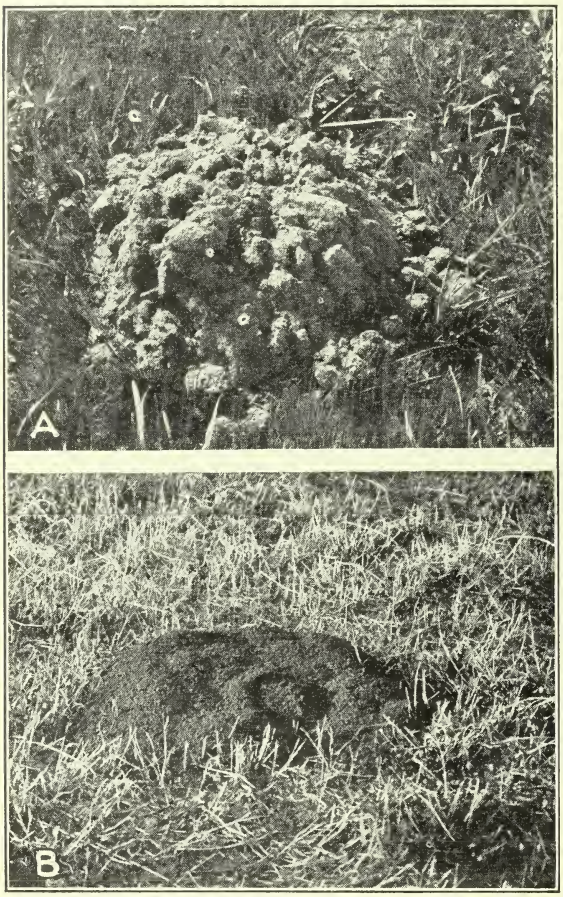

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FIGURE 6.—*A*, Mound of western mole; *B*, mound of pocket gopher. The former is the more symmetrical, being built up volcano fashion by upheavals through the center. The latter is fan shaped, thrown out to one side of the burrow exit.

As to seasonal activity, it may be said that moles probably never become dormant. They extend their surface runways, however, mainly at times when soil conditions are favorable—after rains in summer or during periods of thaw in winter. At other times in their search for food moles must use their old runs or work at depths and in situations unaffected by frost or drought. Movements of soil-inhabiting worms and insects, including larvae, tend to bring ever fresh supplies of food into these tunnels.

BREEDING HABITS

Contrary to popular opinion, moles are slow breeders. Their life of seclusion shelters them from many of the dangers that constantly threaten the existence of the small mammals living aboveground. To maintain their normal numbers from generation to generation, a rapid rate of increase, therefore, is not necessary. The young are brought forth early in the spring in rudely constructed nests of half-green grass stubble and rootlets. The number in a litter of Townsend's mole is commonly three; the common eastern mole usually has four.

Moles grow and develop with surprising rapidity. In the Northwest most of the young are born in the latter half of March and the first half of April, spend about a month in the nests, and early in June are so well grown as not ordinarily to be distinguished from the parent moles. This rapid growth accounts for the fact that small young moles are seldom trapped. By the time they leave the home nest and take to the runways for themselves they have already attained something like the size and proportions of adults.

FOOD HABITS

A mole's appetite seems to be almost insatiable. When held in captivity and given food to its liking, one will sometimes eat more than its own weight in a day. The large quantity of food thus required is no doubt due to the intensely active life the little animal leads. Few other mammals are relatively as strong or do as much hard work in a day.

The mole's food, which has been the subject of much discussion, generally consists of adult insects and their larvae, and earthworms. Examination of 200 stomachs of the common eastern mole, taken in all months of the year, has demonstrated that earthworms and white grubs constitute the bulk of the food. Beetles and their larvae, other ground-inhabiting insects and their cocoons and puparia, spiders, centipedes, and some vegetable matter also are included in the eastern mole's diet.

Townsend's mole also lives largely on earthworms and larval and adult insects, but it takes a considerably greater quantity of vegetable matter than does the eastern mole. Townsend's mole eats tulips, tigridias, bulbous iris, carrots, parsnips, potatoes, peas, beans, vetch, oats, corn, and wheat, and these often form substantial portions of its fare. Of 45 stomachs of this mole analyzed in the laboratory of the Section of Food Habits, Fish and Wildlife Service, 25 contained vegetable matter varying from a trace to 100 percent. This mole shreds the large tubers and bulbs with its strong front feet and then works the shreds into its mouth. Smaller roots, such as carrots and parsnips, are readily chewed up, the mole's mobile snoutlike nose being easily bent out of the way. As the mole's short teeth are not well suited to gnawing, the damaged roots are mangled but not cut clean (fig. 7).

ECONOMIC STATUS OF THE MOLE

Through the ages moles, in common with other burrowing animals, have undoubtedly played an important part in the evolution of the soil. By constantly moving and stirring it, bringing up subsoil, and carrying down organic matter from the surface, they have contributed to the natural building up of soil fertility. With man's occupancy of the land, however, the value of the mole as a cultivator ceases; the natural process is much too slow.

Under some conditions moles may not prove objectionable, and through their consumption of harmful insects—cutworms, white grubs, and other species—they may be decidely beneficial. In the vast areas of uncultivated and waste lands they are in nowise inju-

rious and should be left unmolested, to carry on their function in Nature's scheme.

In cultivated areas, however, moles may seriously interfere with man's use of the soil, and in making their mounds and runways they often disfigure lawns, damage golf courses, and ruin seed beds in gardens and nurseries. They cause damage in cornfields (fig. 8), gardens, and flower beds by consuming seed corn and plant roots and also by traveling along the rows, heaving the plants out of the ground, and causing heavy crop losses by thus cutting off the moisture supply and injuring the roots. Mounds raised by moles in hayfields break or quickly dull the knives of the cutter bar of the mower or else necessitate raising the bar so much as to greatly reduce the crop.

B37515

FIGURE 7.—Tigridia stalks (*A*) mangled by moles in removing the bulbs, and (*B*) cut clean by pocket gophers.

Observations have indicated that the mole is also a potential carrier of plant pests and diseases, and the mole's work may seriously increase the damage during such outbreaks. In the Pacific Northwest it was noted in one case, for instance, that damage to bulbs in a disease area was most severe where the plants had been undermined by Townsend's moles. In scratching or eating infected bulbs or roots and then going to healthy plants these animals may spread disease organisms, such as the mosaic virus and other bacteria or spores as well as injurious nematodes. Through loose soil one mole may easily travel 100 yards a day, and strict sanitation in the bulb industry may thus be nullified.

TRESPASSERS IN MOLE RUNWAYS

The mole is not permitted to enjoy undisputed occupancy of the underground galleries that its industry has constructed. Certain other small mammals, particularly shrews, voles or meadow mice, and sometimes ordinary house mice, rats, and pocket gophers, find these tunnels convenient highways for traffic and marauding. As a result of this trespassing the reputation of the mole suffers, for it is blamed for much of the injury to seeds, grains, tubers, and roots of cultivated plants, that is chargeable to these intruding rodents. A study of tooth marks on the damaged products (fig. 7) or the systematic trapping of the intruders will bear out this statement. In the East,

34071M

FIGURE 8.—Injury to corn resulting from a heavy infestation of moles at Osgood, Ind.

Middle West, and West, counts of the occupants of mole runs have shown that the trespassers are often more numerous than the moles.

NATURAL ENEMIES AND CHECKS

On account of its secluded life the mole is little subject to attacks by the many foes of other small mammals. Its burrow is so small that no formidable enemies except, perhaps, small weasels or snakes can follow it underground, and as it seldom leaves its passageways there is little likelihood that it will be seen by predatory animals. When a mole is working near the surface, however, the movements of the soil may readily be detected by a watchful foe, and it is probable that those taken by hawks and owls and by other hungry denizens of the wild are seized when these watchful creatures notice a disturbed spot of earth. There is good evidence that moles are distasteful to some wild animals at least, if not to all, and they are seldom eaten by the domestic cats and dogs that have learned to catch them. Their peculiar rank odor may account for their not

being relished. The dense, soft fur also may be objectionable to some animals.

Among birds of prey, hawks and owls take only a small toll from the mole tribe. Examination of the stomach contents of more than 2,000 of these birds disclosed the remains of only 13 moles. Five of these had been eaten by the red-tailed hawk, 4 by the red-shouldered hawk, and 1 each by the broad-winged hawk, the barred owl, the great gray owl, and the screech owl. Of 3,005 skulls of small mammals found in pellets disgorged by the barn owl, only 2 were of the mole.

Occasional or periodic floods that spread over lowlands adjoining streams constitute one of the greatest checks to the inordinate increase of moles. During these inundations large numbers of moles may be found congregating on elevated knolls and ridges or clinging to drift masses lodged against various obstructions. Even though these individuals survive, their young have probably perished, for it is in the breeding season that freshets are most common, and it is known that even heavy rains at this season drown some of the young in the nests.

CONTROL METHODS

Moles are comparatively difficult to control, but one who is patient, persevering, and somewhat skillful can catch or destroy them in a number of ways.

TRAPPING

Trapping is the most universally applicable and satisfactory method of mole control, but it is successful only if the habits and instincts of the mole are carefully considered. The suspicion of the mole, for instance, is aroused when its sensitive nose encounters anything foreign in its runway, and it will immediately back up and burrow around or under an ordinary trap set in its tunnel. It is not suspicious of dirt blocking the runway, however, as its burrow is frequently closed by farm machinery and by man and large animals stepping on it. The mole will immediately push its way into such a dirt blockade, reopen it, and continue on its way. This habit provides opportunity for using a specially designed trap that straddles, encircles, or is held suspended above the runway, the trigger pan resting on or hidden in a dirt blockade. Under such conditions the unsuspecting mole cannot detect the presence of the trap, and in pushing into the dirt obstruction it either lifts the trigger pan or pushes the dirt against the hidden trigger arm and thus releases the trap spring. If this general principle is understood by the trapper it will greatly simplify his efforts.

Another fundamental condition to be remembered is that the mole is most sensitive to an unnatural environment. For this reason the careful or experienced trapper never tears up large or numerous sections of the mole burrow in attempting to locate a favorable setting for a trap. The trapper should also bear in mind that a poorly set trap is a detour sign for the ever-suspicious mole.

The selection of a frequently used runway for a trap set is of prime importance. East of the Rocky Mountains most of the traps will have to be placed in the hunting tunnels, which are close to the surface and are indicated by the conspicuous ridges. It is to be remembered that these surface runways are made for the primary purpose of finding food. Many of them are therefore not used more than once; others, however, serve as highways and are used regularly. Ordinarily a runway that takes a more or less straight course for some distance, or seems to connect two systems of workings, will be in constant use. On the other hand, a tunnel that has mouse holes or breaks opening into it is not being used, as a mole invariably repairs any such surface openings. Thus the trapper can often determine the used tunnels by poking a small hole into all on the area and noting later, usually within a few hours, which ones have been closed. In large fields the runs in use may be found by driving a wagon or automobile back and forth across the area, flattening the mole ridges at intervals of 50 to 100 feet; the following day the regularly used runways will be raised again.

When the trapper can locate the deeper runs, which often are highways used by many individuals, he may catch a number of moles by continued use of traps in the same place. Such deeper tunnels are usually 3 to 12 inches or more below the surface, along fence lines or ridges in open fields, or at crossings from sodded to cultivated ground. Experiments have shown that in such cases an entire 6-acre field can be successfully treated by setting traps along the fence rows.

As moles are active throughout the year they may be trapped at any season, although it is not practical to carry on operations when the ground is frozen or exceedingly dry. The best time to trap is when fresh signs of mole activity are noted.

LOCATING RUNWAYS OF PACIFIC COAST MOLES

The larger moles of coastal Washington, Oregon, and California (*Scapanus*) differ in habits from the common moles east of the Rocky Mountains in that they push to the surface numerous piles of earth (mole hills) indicating the approximate location of their deeper burrows (fig. 5). This habit makes it feasible to trap them in the deeper, main-traveled tunnels.

In locating the runway a probe or slender metal rod, 3½ or 4 feet long and about ⅜ inch in diameter, such as an end-gate rod, or a piece of ¼-inch gas pipe may be used. This should be pushed into the soil 3 or 4 inches away from a selected mound (fig. 9). If directly over the runway, the trapper will feel a sudden give as the rod breaks into the tunnel opening. If this is not felt, the rod should be moved to either side and the probing process repeated at 2-inch intervals around the mound until a break is made through into the runway. Further probing at intervals of a foot or so from the mound will enable the trapper to determine the direction of the tunnel. Having thus definitely located the underground runway, he should excavate a trap hole and set the trap in the manner described on page 12.

MOLE TRAPS

Mole traps on the market are of two general types, the gripping and the harpoon. Gripping traps are of several designs, including the choker-loop trap (fig. 10), the scissors-jaw trap (fig. 11), and the diamond-jaw trap (fig. 12).

All are about equally effective. The harpoon trap (fig. 13) is more popular than traps of the gripper type because it is more easily set. It is somewhat less efficient, however, as the mole may escape if the prongs do not strike a vital spot.

In using the harpoon trap (fig. 13) the operator merely packs down the runway ridge with his foot and pushes the set trap (with safety catch in place) into the ground so that the trigger pan rests snugly on the depressed ridge and the two pointed supports straddle the runway evenly. The safety catch is then released, and the setting is complete. If the ground is hard or gravelly it is advisable to spring the trap once to make sure that the impaling spikes, or prongs, easily penetrate into the soil for their full length. If they do, the trap should be reset without changing its position; if not, a new place should be selected.

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FIGURE 9.—Locating deeper runway of Townsend's mole by probing around the mound with an iron rod.

To set a gripper trap (figs. 10, 11, and 12) it is usually necessary to make an excavation across the burrow and a little deeper than the burrow, just the width of the trap. A garden trowel is useful for this purpose. The exact direction of the tunnel is then noted from the opened ends, and the set trap is placed so that its jaws evenly straddle, or its loop encircles, this line or course. The excavated section is then blocked with loose, damp soil from which all gravel and rubbish have been removed. The soil is packed firmly underneath the trigger pan with the fingers and the trap settled so that the trigger rests snugly on the built-up soil; this step is omitted when the diamond-jaw trap (fig. 12) is used. Finally, the trap hole is filled with enough loose dirt to cover the trap level with the trigger pan and exclude all light from the mole burrow. If this is done carefully, the mole in forcing its way through the soil blockade will be certain to spring the trap—by raising the trigger pan

(of the choker-loop or scissors-jaw trap) or by moving it to one side (if the diamond-jaw trap is used).

Choker-loop and diamond-jaw traps, both of the gripper type, may be successfully set in loose, mellow, damp soils without making an excavation, by following the method described for setting the harpoon trap.

OTHER METHODS

Caretakers of golf courses, cemeteries, and other large areas of lawn and garden frequently detect the movements of moles just below the surface and easily throw them out with a shovel or hoe. Some gardeners make a practice of opening runways each morning with the hope of later catching the moles in the act of repairing them. Where hose connections are available moles may be drowned out by flooding the runways, especially during April, when the young are most likely to be in the nest and cannot escape the water.

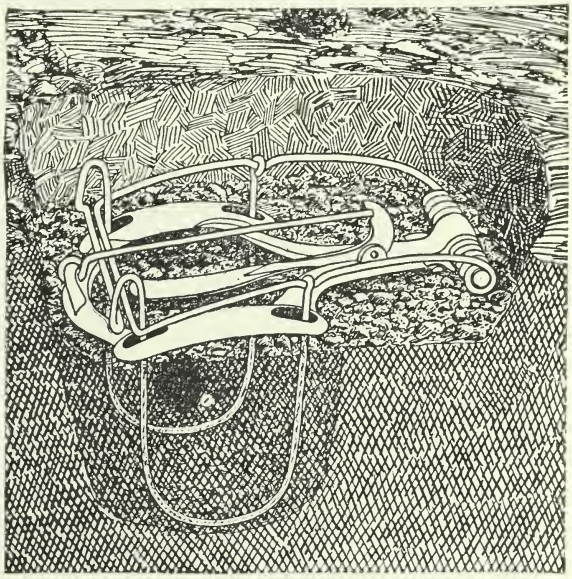

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FIGURE 10.—A choker-loop trap, in position at one of the deeper runways of a mole's system of burrows. The loops must encircle the runway.

Gassing has been given increased attention in recent years, following the development of highly toxic and easily applied compounds. Calcium cyanide dust or carbon disulphide in a gaseous form pumped into the runway may destroy the moles under certain conditions or may cause them to avoid the gassed areas. Experiments, however, have indicated that this method is not dependable and that the cost is greater than the results justify.

The marked tendency of the mole to avoid obnoxious or injurious substances often makes the use of repellents practical in small restricted areas of lawn or garden. Lye, paradichlorobenzene, and naphthalene seem most effective. The visible mole runways should be opened with the finger or a small stick, a teaspoonful of one of these materials inserted, and the opening carefully closed. Applications should be made at intervals of 8 or 10 feet along the raised runways and should be repeated whenever sections of old runways show signs of being in use or when any new ridges appear.

Fencing small areas with woven wire or with concrete is sometimes practicable where valuable plants require special protection

against eastern moles. Galvanized hardware cloth with 3 meshes to the inch for excluding mice as well as moles will last a number of years, but concrete walls 1 inch or more thick have been found cheaper in the long run. Fencing alone, however, cannot always be depended upon, and it may be necessary to supplement this method of control by trapping.

In destroying most small animal pests, poisoning is usually the means most effectively employed, and many experiments have been conducted to learn whether poisons can be used also in mole control. Because, however, of the specialized, carnivorous food habits of moles and their highly developed instinct to avoid unfamiliar substances,

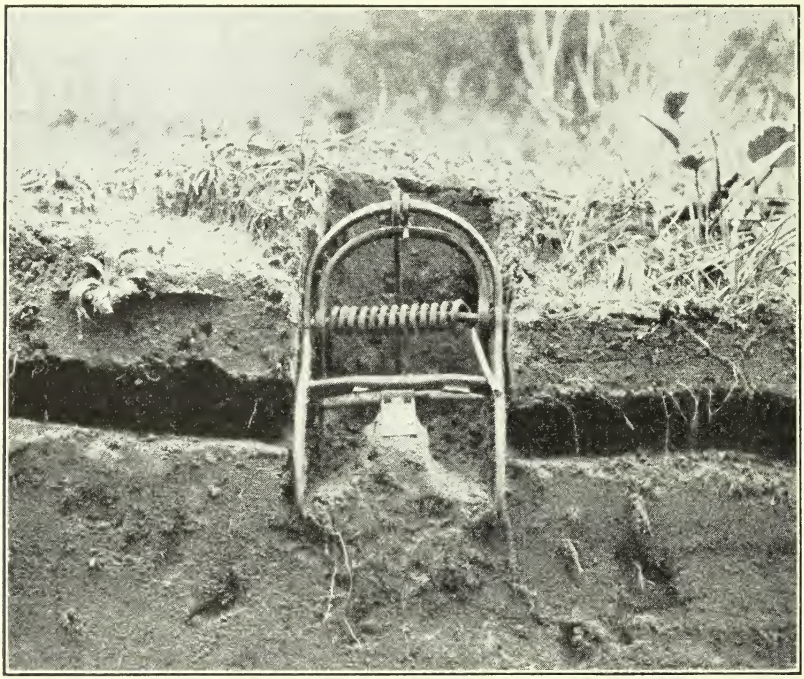

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FIGURE 11.—A scissors-jaw trap, set at the proper depth in relation to mole tunnel, the jaws straddling the burrow, a ridge of firmly packed soil in place under the trigger, and the set ready to be filled in with loose soil.

no method of poisoning them can be recommended as generally satisfactory.

Pocket-gopher traps, gopher guns, snares, and other mechanical devices also are ordinarily impractical for use in controlling moles.

UTILIZING MOLESKINS

In England and Scotland and in some of the continental coast countries of Europe moles are trapped extensively for their pelts, and on certain estates for the private bounties paid for their extermination. This has hitherto been the sole source of supply of moleskins for use by manufacturing furriers in this country. The Fish and Wildlife Service has found, however, that, although the skins

of the common mole of the eastern United States are somewhat inferior in quality to the imported product, pelts of certain other American moles may prove to be equal in value for the furrier's purposes to those of the European species (*Talpa europaea*). This applies particularly to the skins of Townsend's moles, which are certainly larger than those of Europe and appear to have texture and fur fully as good. They cannot, however, be handled and processed in the same lots with the latter, as they do not take dyes in the same way.

As a rule the farmer boy or the trapper who has accumulated a lot of moleskins will want to dispose of them as he would any other kind of pelt, by selling to a reliable fur dealer. If local furriers do not handle this class of skin and are not informed on current prices or methods of grading, it is well to write for lists or quotations to one of the larger establishments doing business by mail. The plan of pooling shipments of moleskins through farm-bureau organizations or county agricultural agents has been successfully practiced in some communities.

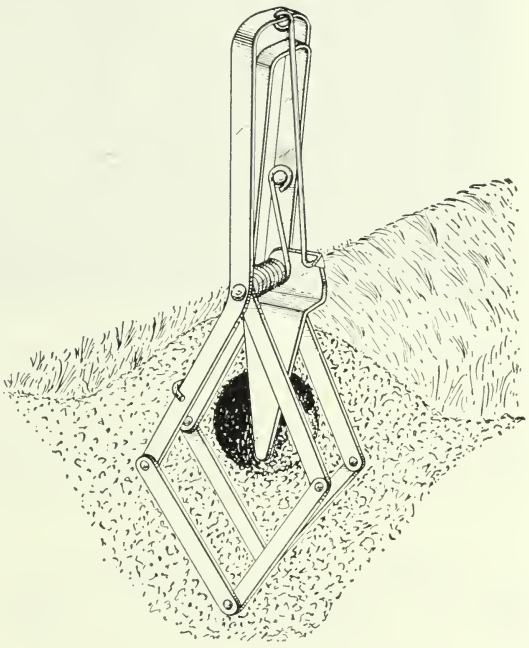

FIGURE 12.—A diamond-jaw trap, set. The runway is directly back of the trigger. Moving the trigger in any direction releases the spring.

SKINNING MOLES

The process of skinning a mole is simple, and with a little practice one should be able to do the job in 5 minutes, including stretching the skin to dry. The skin envelops the animal loosely, showing considerable slack wherever handled. It is so tough, too, particularly on the larger species, that it will stand all the pulling necessary to remove it from any part of the body. Perhaps the best tool for the work is a small pair of strong scissors about 4 or 5 inches long, with one blunt-pointed and one sharp-pointed blade, though a sharp-pointed pocketknife may be used.

Proceed as follows: With scissors or knife make a slit in the skin down the middle of the belly from chin to root of tail, loosening the pelt with the fingers as you proceed, to avoid cutting through into the abdominal cavity. Now husk the skin from the body, using the cutting tool only to sever the legs at the ankles, the tail at the root, and the arms at the wrists—all on the inside. After a little snipping at

the connective tissue about neck and head, the skin can be pulled over the nose and off the body entirely.

B39510

FIGURE 13.—Setting the harpoon trap. Sharp prongs poised above the runway are released and forced downward when the mole raises the depressed soil under the trigger pan.

When the skin is off, pick from it all bits of fat and snip off the legs and tail, without cutting the pelt proper. Stretch the skin on a board to dry, fur side down, using common pins to hold it in place;

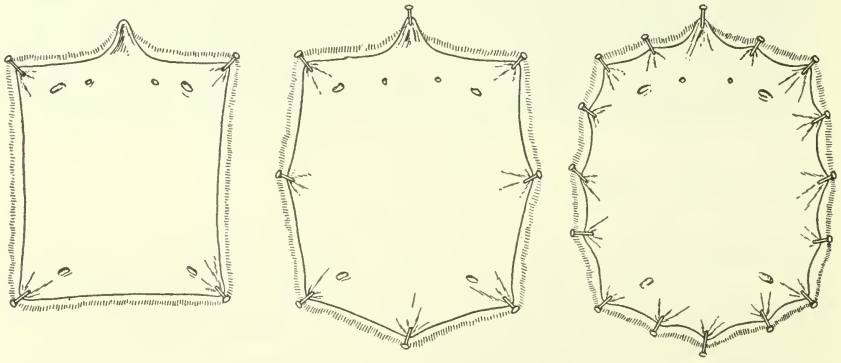

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FIGURE 14.—The three stages in drying a skin: (1) Four pins are first driven in, one in each corner; (2) four intermediate pins are then inserted, the skin being slightly stretched; (3) finally, eight more pins are tacked in, one between each two already in place.

they are strong enough and sharp and do not leave conspicuous holes in the pelt, as would tacks or nails. A light tack hammer will serve to drive the pins in, and a pair of forceps with corrugated tips will

help in the stretching, though after a little experience one will only need to use the fingers (fig. 14).

Hang the drying boards where the air circulates freely, but not in the sunshine. In damp or rainy weather when skins are being dried indoors they should be placed as far as practicable from any stove or other source of heat. They will dry in a few days and, when stiff and parchmentlike, may be stored away indefinitely, though it is best not to hold them more than a few months to a year, as they may become brittle with age when not tanned. They need no treatment with preservatives of any sort, but must be kept in a cool, dry place safe from insects and mice.

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